AMEDMENTS

In The Claims:

Please amend the claims as follows:

Claim 1 (currently amended) An image interpolating method, wherein low resolution pixels $Y_{i,j}$ of an image are zoomed to high resolution pixels $Y_{2i,2j}$, comprising:

receiving the low resolution pixels $Y_{i,j}$;

determining a homogenous area and an edge area of the image based on pixel differences of the pixels $Y_{2i,2j}$ in comparing with a threshold, wherein three variables of

$\Delta Y_1 = |Y_{2i,2j} - Y_{2i+2p,2j+2q}|$, $p,q \in \{(0,1),(1,0)\}$,

$\Delta Y_2 = |Y_{2i+2,2j} - Y_{2i,2j+2}|$, and

$\Delta Y_3 = |Y_{2i,2i} - Y_{2i+2,2j+2}|$

are used to determine whether the homogenous area or the edge area by a condition set of:

if $\Delta Y_1 <$ the threshold then

the pixel $Y_{2i+p,2j+q}$ is in the homogenous area

else

the pixel $Y_{2i+p,2j+q}$ is in the edge area as one of edge pixels;

if $\Delta Y_2 <$ the threshold and $\Delta Y_3 <$ the threshold then

the pixel $Y_{2i+1,2j+1}$ is in the homogenous area

else if $\Delta Y_2 <$ the threshold then

the pixel $Y_{2i+1,2j+1}$ is in the homogenous area

else if ΔY_3 <the threshold then

the pixel $Y_{2i+1,2j+1}$ is in the homogenous area

else

the pixel $Y_{2i+1,2j+1}$ is in the edge area as one of edge pixels;

interpolating the low resolution pixels belonging to the homogenous area into the high resolution pixels by a first interpolating algorithm; and

interpolating the low resolution pixels belonging to the edge area into the high resolution pixels by a second interpolating algorithm.

Claim 2 (canceled)

Claim 3. (currently amended) The image interpolating method of claim 12, wherein the first interpolating algorithm includes obtaining the pixel $Y_{2i+p,2j+q}$ by calculating $(Y_{2i,2j} + Y_{2i+2p,2j+2q}) / 2$.

Claim 4 (currently amended) The image interpolating method of claim 12, wherein the first interpolating algorithm includes:

when $\Delta Y_2 <$ the threshold and $\Delta Y_3 <$ the threshold,

the pixel $Y_{2i+1,2j+1}$ is obtained by calculating $Y_{2i+1,2j+1} = (Y_{2i+2,2j} + Y_{2i,2j+2}) / 2$ if the ΔY_2 less than ΔY_3; and

the pixel $Y_{2i+1,2j+1}$ is obtained by calculating $Y_{2i+1,2j+1} = (Y_{2i,2j} + Y_{2i+2,2j+2}) / 2$ if the ΔY_3 is less than ΔY_2.

Claim 5 (currently amended) The image interpolating method of claim ~~12~~, wherein the first interpolating algorithm includes:

when only ΔY_2 < the threshold for the ΔY_2 and the ΔY_3, the pixel $Y_{2i+1,2j+1}$ is obtained by calculating $(Y_{2i+2,2j} + Y_{2i,2j+2}) / 2$.

Claim 6 (currently amended) The image interpolating method of claim ~~12~~, wherein the first interpolating algorithm includes:

when only ΔY_3 < the threshold for the ΔY_2 and the ΔY_3, the pixel $Y_{2i+1,2j+1}$ is obtained by calculating $(Y_{2i,2j} + Y_{2i+2,2j+2}) / 2$.

Claim 7 (currently amended) ~~The image interpolating method of claim 1,~~ An image interpolating method, wherein low resolution pixels $Y_{i,j}$ of an image are zoomed to high resolution pixels $Y_{2i,2j}$, the method comprising:

receiving the low resolution pixels $Y_{i,j}$;

determining a homogenous area and an edge area of the image based on pixel differences of the pixels $Y_{2i,2j}$ in comparing with a threshold;

interpolating the low resolution pixels belonging to the homogenous area into the high resolution pixels by a first interpolating algorithm; and

interpolating the low resolution pixels belonging to the edge area into the high resolution pixels by a second interpolating algorithm, wherein the first interpolating algorithm includes:

when the pixels $Y_{2i,\,2j}$ in the homogenous area, the pixels $Y_{2i,\,2j}$ are interpolated by a linear interpolation algorithm.

Claim 8 (currently amended) The image interpolating method of claim 12, wherein the second interpolating algorithm includes interpolating the pixels $Y_{2i,2j}$ along a direction having a minimum difference in the neighboring pixels.

Claim 9 (original) The image interpolating method of claim 8, wherein the neighboring pixels of one of the pixels $Y_{2i,2j}$ does not include a determined edge pixel.

Claim 10 (original) The image interpolating method of claim 8, wherein when the minimum difference $diff_{min}$ is determined by taking a minimum of four differences of

$diff_1 = | Y_{2i-1,2j} - Y_{2i+1,2j}|$,

$diff_2 = |Y_{2i-1,2j-1} - Y_{2i+1,2j+1}|$,

$diff_3 = |Y_{2i,2j-1} - Y_{2i,2j+1}|$, and

$diff_4 = |Y_{2i+1,2j-1} - Y_{2i-1,2j+1}|$,

wherein the differences including one of the edge pixels is skipped.

Claim 11 (original) The image interpolating method of claim 8, wherein the pixel $Y_{i,j}$ is obtained by calculating $(Y_{2i-1,2j} + Y_{2i+1,2j}) / 2$ at a direction with the minimum pixel difference.

Claim 12 (original) An image interpolating algorithm for an image, wherein low resolution pixels $Y_{i,j}$ of the image are zoomed to high resolution pixels $Y_{2i,2j}$, wherein three variables of $\Delta Y_1 = |Y_{2i,2j} - Y_{2i+2p,2j+2q}|$, $\Delta Y_2 = |Y_{2i+2,2j} - Y_{2i,2j+2}|$, and $\Delta Y_3 = |Y_{2i,2j} - Y_{2i+2,2j+2}|$, $p,q \in \{(0,1),(1,0)\}$ are used, the image interpolating algorithm comprising:

determining at least one of edge pixel and interpolating the pixels Y2i, 2j if the pixel to be interpolated is not the edge pixel by a first algorithm as follows:

if $\Delta Y1 <$ a threshold then

$Y_{2i+p,2j+q} = (Y_{2i,2j} + Y_{2i+2p,2j+2q}) / 2$

else

$Y_{2i+p,2j+q}$ are the edge pixel

if $\Delta Y_2 <$ the threshold and $\Delta Y_3 <$ the threshold then

$\Delta Y_{min} = \min\{\Delta Y_2, \Delta Y_3\}$

if $\Delta Y_{min} = \Delta Y_2$

$Y_{2i+1,2j+1} = (Y_{2i+2,2j} + Y_{2i,2j+2}) / 2$

else

$$Y_{2i+1,2j+1} = (Y_{2i,2j} + Y_{2i+2,2j+2}) / 2$$

else if $\Delta Y_2 <$ the threshold then

$$Y_{2i+1,2j+1} = (Y_{2i+2,2j} + Y_{2i,2j+2}) / 2$$

else if $\Delta Y_3 <$ the threshold then

$$Y_{2i+1,2j+1} = (Y_{2i,2j} + Y_{2i+2,2j+2}) / 2$$

else

$Y_{2i+1,2j+1}$ is one of the edge pixel.

Claim 13 (original) The image interpolating algorithm of claim 1, further comprising interpolating the edge pixels according to a second algorithm as follows:

calculating a plurality of pixel differences of

$diff_1 = | Y_{2i-1,2j} - Y_{2i+1,2j}|$,

$diff_2 = |Y_{2i-1,2j-1} - Y_{2i+1,2j+1}|$,

$diff_3 = |Y_{2i,2j-1} - Y_{2i,2j+1}|$, and

$diff_4 = |Y_{2i+1,2j-1} - Y_{2i-1,2j+1}|$,

wherein the differences including one of the edge pixels is skipped;

finding a minimum of the pixel differences; and

interpolating the pixel $Y_{2i,2j} = (Y_{2i-1,2j} + Y_{2i+1,2j}) / 2$ at a direction with the minimum pixel difference.